

### **ABSTRACTION**

The distributed virtual SAN infrastructure provides a plurality of host systems with a scalable dynamically expandable distributed virtual storage pool, which powered by a virtual storage automatic construct protocol. The distributed virtual SAN infrastructure includes one or more IP SAN units, the management console, the distributing control management station and the network infrastructure, wherein, the network infrastructure provides the communication links between all systems in this distributed virtual SAN. The storage of any IP SAN unit can be shared and accessed by multiple hosts. On the other hand, a single host may be assigned and able to access multiple volumes from multiple IP SAN units, which in fact, effectively provide each host a virtual scalable storage system. In addition, the storage accessing goes directly through communication link between hosts and SAN units, which means it is out-band accessed. This has proved to have better performance and scalability than those in-band accessed virtual SAN. Further, this also allows virtual storage pool to be dynamically expanded by adding one or more IP SAN unit without interrupting normal data accessing from hosts. The implementation of web-based multi-concurrent tasks capable console allows entire distributed virtual SAN infrastructure to be managed and monitored from centralized console. Finally, The IP based distributed virtual SAN infrastructure represents a new type of central controlled distributed scalable virtual machine (CCDSVM). The software modules used in IP based distributed virtual SAN infrastructure represents a new type of web base operating system model. Further, the methods and principles of IP based distributed virtual SAN storage pool automatic building and the delivery of storage service to client based on demanding also can be applied to various other distributed services for their service pool automatic building and services delivery which CCDSVM infrastructure.